MAINE FOREST SERVICE
October 7, 1983

BIRCH DIEBACK ALERT

Mortality of paper birch in Hancock and Washington Counties, reported to the Entomology Division by foresters, was investigated recently to acertain the cause.

Examination of dead and dying trees in five different townships revealed the presence of shoestring root rot (Armillaria = Armillariella mellea) in every dead birch, and in many of those with advanced deterioration of the crowns. Although attacks by the bronze birch borer (Agrilus anxius) were also evident on many dead trees, borer activity was lacking in some of the recently-killed trees, indicating that the shoestring fungus was the more consistent contributing factor. However, the bronze birch borer has the potential to build up under these conditions and could become equally important in accelerating birch decline on thousands of acres in these two counties.

The symptoms and the present overall appearance of the dying birch in these stands are very much like the widespread birch malady of the 1940's, when over 75% of the birch was destroyed by the complex birch dieback phenomenon.

Birch dieback is usually associated with reduced tree vigor brought about by physiological maturity, stress from drought or defoliators, and by other factors such as ice and snow damage. Shock from excessive openings for thinnings can also initiate a decline in vigor of the residual trees.

We do not believe that all birch stands are in immediate danger of another catastrophe, but woodland managers and owners should be aware that those stand which are approaching maturity need to be inspected periodically to detect early signs of an impending problem.

Things to Look For

1. Watch for the rusty-red bleeding on the lower trunks where ambrosia beetles have entered recently killed portions of the stem. After trees have died, look for the typical white mycelial mat of the shoestring fungus between the wood and the bark near the root collar. Look for the girdling activity of the bronze birch borer in affected crowns.

2. Check radial growth on live trees that are showing signs of decline, and compare with healthy trees to determine what proportion of the stand has reached "maturity" for each particular site.

3. Anticipate that tall, spindly trees with small crowns will usually be your indicator trees, giving you the first warning signs of impending stand deterioration.

Recommendations

1. Keep birch stands thrifty by periodic thinnings, but do not remove more than 30% of the basal area per thinning.

2. Determine the probable age of physiological maturity for each site being managed.

3. Commence commercial harvest when stands reach maturity, or soon after deterioration symptoms become evident.

The inoculation of stumps with saprophytes antagonistic to the shoestring fungus has been recommended for thinning operations, but we do not know of any such products that are commercially available.

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The Entomology Division would appreciate reports of birch dieback, or of any other forest pest problems, to help in their detection and monitoring work. Please send information to: Maine Forest Service, Entomology Division, 50 Hospital Street, Augusta, Maine 04330. Tel: 289-2431.